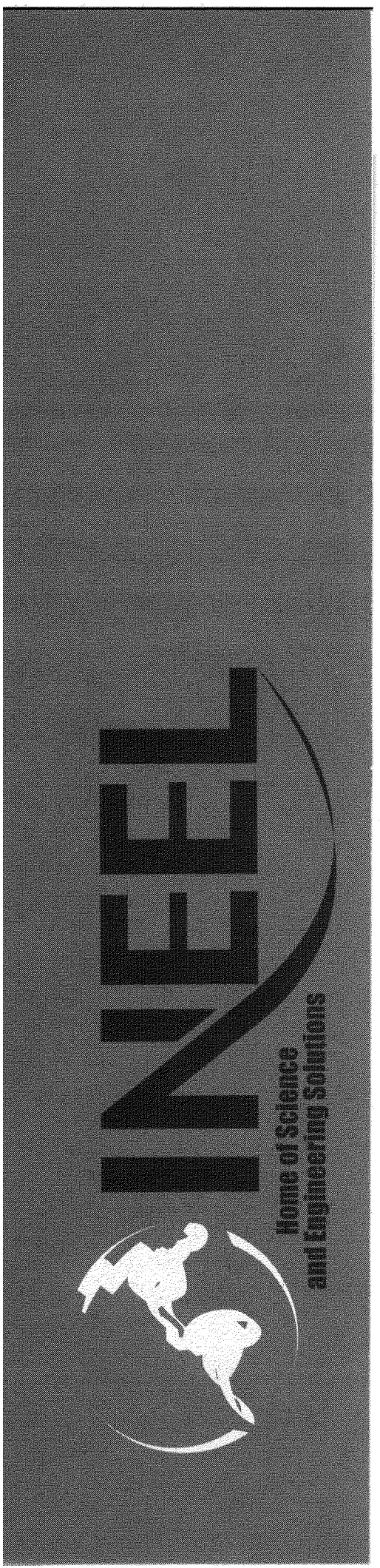

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Revision 0
Project No. 22901

Waste Management Plan for V-Tanks Early Remedial Action for the Test Area North, Waste Area Group 1, Operable Unit 1-10, Group 2 Sites

May 2003

Idaho National Engineering and Environmental Laboratory
Bechtel BWXT Idaho, LLC

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Waste Management Plan for V-Tanks Early Remedial Action for the Test Area North, Waste Area Group 1, Operable Unit 1-10, Group 2 Sites

May 2003

Idaho National Engineering and Environmental Laboratory
Idaho Completion Project
Idaho Falls, Idaho 83415

Prepared for the
U.S. Department of Energy
Assistant Secretary for Environmental Management
Under DOE Idaho Operations Office
Contract DE-AC07-99ID13727

ABSTRACT

This plan describes the waste management and minimization activities associated with the *Comprehensive Remedial Design/Remedial Action Work Plan Addendum for V-Tanks Early Remedial Action for the Test Area North, Waste Area Group 1, Operable Unit 1-10, Group 2 Sites* to be performed at the Idaho National Engineering and Environmental Laboratory.

The activities described in this plan support the early remedial action (ERA) associated with the selected remedy presented in the *Final Record of Decision for Test Area North, Operable Unit 1-10* and the *Explanation of Significant Differences for the Record of Decision for the Test Area North Operable Unit 1-10*, as presented in the *Technology Evaluation Scope of Work for the V-Tanks, TSF-09/18 at Waste Area Group 1, Operable Unit 1-10*. The waste described will be generated at the two sites addressed in the Comprehensive Remedial Design/Remedial Action Work Plan, which are Technical Support Facility (TSF) -09 (comprised of Tanks V-1, V-2, and V-3) and TSF-18 (comprised of Tank V-9). Collectively, the sites are referred to as the V-Tanks.

As presented in the Final Record of Decision, the two sites pose a threat to human health and the environment. The Final Record of Decision and Explanation of Significant Differences determined the remedy for the sites to be soil and tank removal, ex situ treatment of tank contents, and disposal of the removed material. The ERA consists of relocating the sand filter, removing a small section of ancillary piping to allow capping of the piping and isolation of Tank V-9, and soil sampling. Isolating Tank V-9 also may involve removing the piping that delivered sodium hydroxide (NaOH) to the TSF-09 tanks, in order to accommodate removal of Tank V-9 effluent piping. In addition, other debris in the area (such as concrete tank cradles) could require removal to allow excavation and removal of Tank V-9 piping. The Comprehensive Remedial Design/Remedial Action Work Plan Addendum describes the remedial design and remedial action work plan for the ERA and cites this plan as a supporting document required for conducting the remedial action. This plan identifies the types and volumes (when possible) of waste that are anticipated to be generated during the ERA. It also addresses waste characterization strategy; waste storage requirements, transportation, and treatment; as well as designated facilities for ultimate disposal of the ERA waste. The scope of this plan is applicable only to the ERAs.

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TABLES

ACRONYMS

AOC	area of contamination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOE-ID	U.S. Department of Energy Idaho Operations Office
EDF	Engineering Design File
ICDF	INEEL CERCLA Disposal Facility
INEEL	Idaho National Engineering and Environmental Laboratory
IW	industrial waste
IWTS	Integrated Waste Tracking System
LLW	low-level waste
MLLW	mixed low-level waste
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RWMC	Radioactive Waste Management Complex
TAN	Test Area North
TSCA	Toxic Substances Control Act
TSF	Technical Support Facility
VCO	Voluntary Consent Order
WGS	Waste Generator Services
WSA	waste storage area
WTS	waste technical specialist

Waste Management Plan for V-Tanks Early Remedial Action for the Test Area North, Waste Area Group 1, Operable Unit 1-10, Group 2 Sites Remedial Action

1. PURPOSE AND OBJECTIVES

This Waste Management Plan is designed to support the waste management and minimization activities associated with the *Comprehensive Remedial Design/Remedial Action Work Plan Addendum for V-Tanks Early Remedial Action for the Test Area North, Waste Area Group 1, Operable Unit 1-10, Group 2 Sites* (DOE-ID 2003a) to be performed at the Idaho National Engineering and Environmental Laboratory (INEEL).

The waste management activities described in this plan support the early remedial action associated with the selected remedy presented in the *Final Record of Decision for Test Area North, Operable Unit 1-10* (DOE-ID 1999) and the *Explanation of Significant Differences for the Record of Decision for the Test Area North Operable Unit 1-10* (DOE-ID 2003b), as presented in the *Technology Evaluation Scope of Work for the V-Tanks, TSF-09/18 at Waste Area Group 1, Operable Unit 1-10* (DOE-ID 2002). The waste described in this plan will be generated at the two sites addressed in the Comprehensive Remedial Design/Remedial Action Work Plan (DOE-ID 2003a), which are Technical Support Facility (TSF) -09 (comprised of Tanks V-1, V-2, and V-3) and TSF-18 (comprised of Tank V-9). Collectively, the sites are referred to as the V-Tanks.

As presented in the Final Record of Decision (DOE-ID 1999), the two sites pose a threat to human health and the environment. The Final Record of Decision and Explanation of Significant Differences (DOE-ID 1999, 2003b) determined the selected remedy for the sites to be soil and tank removal, ex situ treatment of tank contents, and disposal of the removed material. The early remedial action consists of relocating the sand filter, removing a small section of ancillary piping to allow capping of the piping and isolation of Tank V-9, and soil sampling. Isolating the V-9 tank may also involve removing the piping that delivered sodium hydroxide (NaOH) to the TSF-09 tanks, in order to accommodate safe and efficient removal of Tank V-9 effluent piping. In addition, other debris in the area (such as concrete tank cradles) could require removal to allow excavation and removal of the Tank V-9 piping. Pipes associated with the sand filter were removed previously. Currently, no pipes are associated with the sand filter. The Comprehensive Remedial Design/Remedial Action Work Plan Addendum describes the remedial design and remedial action work plan for the early remedial action and cites this Waste Management Plan as a supporting document required for conducting the remedial action (DOE-ID 2003a).

This plan identifies the types and the volumes (when possible) of waste that are anticipated to be generated during the early remedial action. In addition, this plan addresses the waste characterization strategy; requirements for waste storage, transportation, and treatment; as well as designated facilities for ultimate disposal of the early remedial action waste. The scope of this Waste Management Plan is applicable only to the early remedial actions.

The V-Tank remediation activities for the tanks and waste discussed in this plan will occur within the area of contamination (AOC) at the TSF-09 and TSF-18 sites. That waste will be stored, treated, or disposed of at appropriate waste management facilities. The majority of waste generation is anticipated to occur during implementation of the following remedial action work-task activities:

- Isolating Tank V-9 and relocating the sand filter
  - Inspecting the remote line
  - Removing debris (such as concrete tank cradles and ancillary piping) that would interfere with the excavation required for enabling V-9 isolation
  - Relocating the sand filter
  - Excavating the area (as necessary to access pipes)
  - Isolating the piping
  - Removing Voluntary Consent Order (VCO) piping (VCO work is not performed under this work plan)
  - Removing, packaging, and disposing of the valve pit (VCO work is not performed under this work plan)
  - Characterizing removed material for waste disposal
  - Loading and transporting waste to the INEEL CERCLA Disposal Facility (ICDF)
  - Disposing of the removed structures and contents
  - Contouring and grading the area to provide appropriate site drainage
- Sampling soil to further characterize the V-Tanks' AOC
  - Performing auger drilling of an array of boreholes for sampling and subsequent analysis to further characterize the horizontal and vertical extent of soil contamination in the area surrounding TSF-09, TSF-18, and migration pathways
  - Performing decontamination activities between boreholes and before demobilization of the drilling equipment and rig
  - Performing sample preparation, preservation, and shipment activities
  - Returning unaltered sample material from subcontracted analytical laboratories to the AOC.

2. SITE BACKGROUND

As a supporting document to the Comprehensive Remedial Design/Remedial Action Work Plan Addendum (DOE-ID 2003a), this Waste Management Plan provides only a brief background of TSF-09 and TSF-18 in order to support the waste identification and volume classifications (presented in this document) for TSF-09 and TSF-18.

The TSF-09 and TSF-18 sites, shown in Figure 1, are located in an open area east of Test Area North (TAN) -616 and north of TAN-607 and involve ancillary piping near the tank areas. It should be noted that TAN-615, also shown in Figure 1, was removed under the Decontamination and Dismantlement Program in 2002.

Installed in the early 1950s, the four underground storage tanks and associated pipes at TSF-09 and TSF-18 were part of the system designed to collect the following materials for treatment:

- Radioactive liquid effluents generated in the hot cells, laboratories, and decontamination facilities at TAN
- Waste from the Initial Engine Test Facility.

The TSF-09 site consists of three 37,860-L (10,000-gal) underground storage tanks referred to as Tanks V-1, V-2, and V-3. These tanks are 3 m (10 ft) in diameter and 5.5 m (18 ft) in length.

The TSF-18 site includes one 1,514-L (400-gal) conical underground storage tank, referred to as Tank V-9, and associated pipes located approximately 2.1 m (7 ft) below ground surface. The tank is approximately 1.06 m (42 in.) in diameter in the center and extends roughly 2.1 m (7 ft) from the top of the tank to the tip of the cone. Low-level radioactive wastewater from the facilities at TSF was transferred to Tank V-9 via the TAN-1704 valve pit, which operated from 1953 to the late 1980s to route wastewater from the original facilities at TSF. The VCO Program will remove and manage this valve pit, its associated influent lines, and additional piping, in accordance with Resource Conservation and Recovery Act (RCRA) -regulated VCO requirements.

In addition to Tank V-9, TSF-18 also includes an aboveground sand filter that is believed to have been used to remove particulates from Tank V-9 effluent. The filter is a concrete box containing approximately 19 L (5 gal) of material. The material in the sand filter is reported to resemble potting soil in color and texture. The concrete box has outer dimensions of approximately 1.5 m (5 ft) wide by 1 m (3 ft) deep by 1 m (3 ft) high; the box walls are 10 to 15 cm (4 to 6 in.) thick. The box resides on a concrete pad that is slightly wider than the box's outside dimensions. The anecdotal history of the structure indicates the filter was used for only one day in 1970 before it became plugged. Pipes associated with the sand filter were removed previously. Currently, no pipes are associated with the sand filter.

The contents of the sand filter were sampled in March 1997. Results indicate the presence of polychlorinated biphenyls, volatile organic compounds, and semivolatile organic compounds below regulatory levels, as well as concentrations of radionuclides. Sample results associated with the contents of the sand filter are provided in the Comprehensive Remedial Design/Remedial Action Work Plan Addendum (DOE-ID 2003a). A criticality evaluation performed on the sand filter's contents, as documented in Engineering Design File (EDF) -3447, "Criticality Concerns Associated with the V-Tanks," determined that there is not sufficient U-235 present to pose a criticality concern.

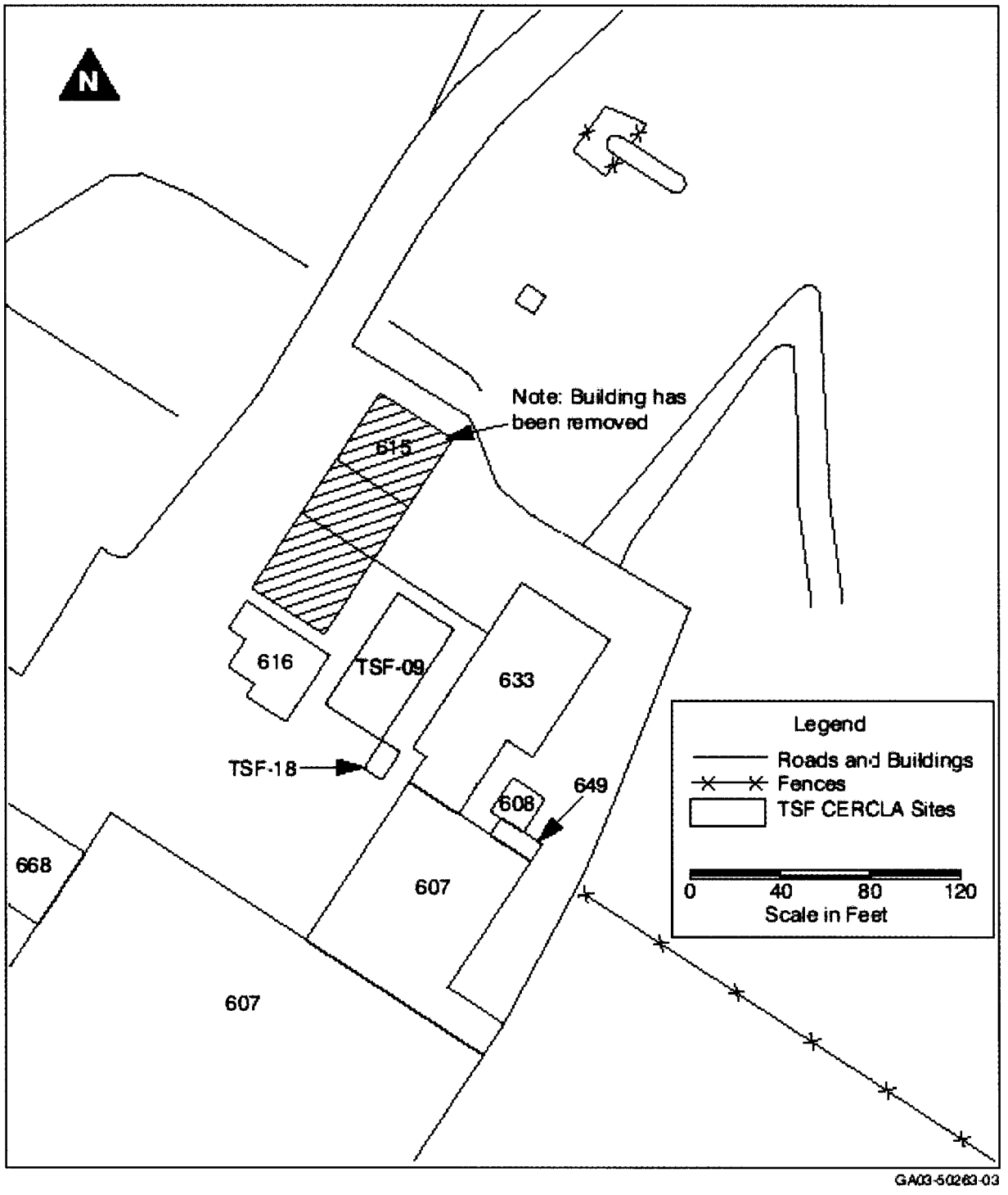

Figure 1. Operable Unit 1-10: TSF-09 and TSF-18 sites.

Figure 2 depicts sources of waste that likely were contained in Tanks V-9, V-1, V-2, and V-3. The indicated subsurface influent and effluent lines associated with the tanks are meant to be representative, rather than technically accurate.

As shown in Figure 2, Tank V-9 received wastewater from several TAN sources via the TAN-1704 valve pit, which delivered the waste via two subsurface influent lines. In 1991, those lines were cut and capped within the valve pit. The valve pit received wastewater from four influent lines:

- A line serving the TAN-616 evaporator pit sump and pump room sump
- TAN-607 laboratory drain
- TAN-607 Warm/Hot Shop
- TSF-21 Valve Pit #2.

One subsurface effluent line discharges overflow from Tank V-9 to Tanks V-1, V-2, and V-3. Some uncertainty exists regarding the exact source of waste since, in the past, the waste delivered to TankV-9 was not well documented.

Tanks V-1, V-2, and V-3 are each equipped with three subsurface influent lines and one subsurface effluent line. One influent line piped radioactive wastewater from Tank V-9 to the TSF-09 tanks. A second line delivered NaOH from the caustic storage tank (V-4) to neutralize the waste. A third line was a process-return flow line that transported waste from the TAN-616 evaporator pit via the operating pump room to the TSF-09 tanks. A single effluent line on each tank is routed from the TAN-616 pump room and evaporator system. Tank V-3 is identified as having an additional inlet line from the TAN-615 east and west sumps.

Only the effluent piping from Tank V-9 to TAN-616 is planned to be removed during the early remedial activities. However, some of the piping that delivered NaOH to the TSF-09 tanks may be removed to accommodate safe and efficient removal of the Tank V-9 effluent piping. In addition, other debris in the area (such as concrete tank cradles) could require removal to allow excavation and removal of the Tank V-9 effluent piping.

During the waste-disposal system operations, waste transfers (to and from the tanks) resulted in spills that contaminated the surface and subsurface around and north of TSF-09. The current AOC for the Group 2 sites is defined by the contaminated soil associated with operations at TSF-09 and TSF-18. Although the surface- and subsurface-contamination resulted from spills that occurred when waste was transferred to and from tanks during waste disposal system operations, additional contamination might have originated from run-off from the adjacent cask storage pad, and from windblown contaminant transport from the TSF-18 area. Anecdotal information from the *Preliminary Scoping Track 2 Summary Report for the Test Area North Operable Unit 1-05: Radioactive Contamination Sites* (ITC 1994) indicates that weed-control chemicals were applied in the contaminated area to prevent contamination uptake by area weeds. In interviews, workers involved with this area recalled that the soil to which the weed-control chemicals were applied was removed.

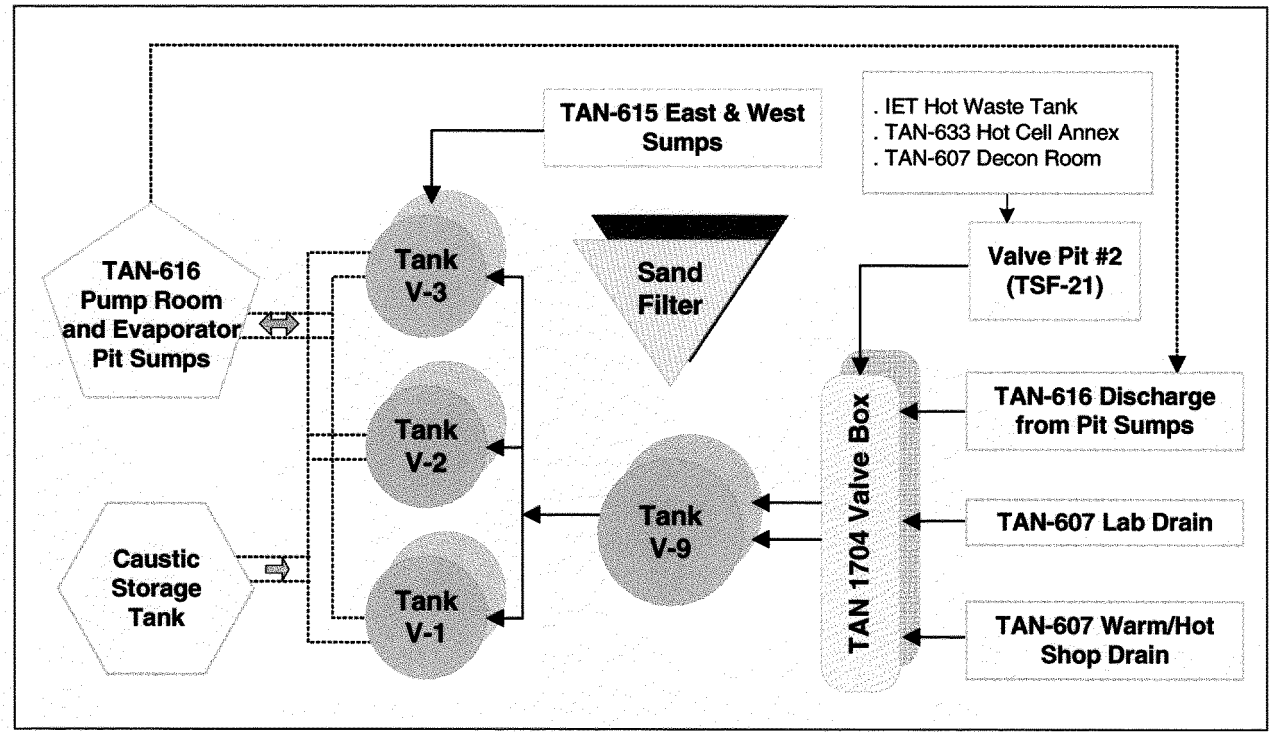

Figure 2. TSF-09 and TSF-18 waste distribution.

Four soil-sampling events have been conducted at TSF-09 and TSF-18. The soil sampling provides data regarding the nature of contaminants; however, the horizontal and vertical extent of soil contamination is not identified fully. The extent is estimated conservatively, based on sampling, radiation surveys, and geologic features. Currently, the horizontal extent is estimated to encompass an area of 15.2×24.4 m (50×80 ft). The vertical extent of contamination is known to extend to a depth of 6.7 m (22 ft). Additional soil sampling is planned in 2003 to further define the horizontal and vertical extent of the soil-remediation area. The planned soil sampling will identify and characterize for disposal those soils requiring remediation for risk-based closure.

3. WASTE MANAGEMENT

3.1 Waste to be Generated

A waste stream summary detailing the waste anticipated from implementing the Comprehensive Remedial Design/Remedial Action Work Plan Addendum (DOE-ID 2003a) and the storage strategies currently planned for the waste are shown in Table 1.

Piping and debris generated during the early remedial actions will be inspected to verify that no free liquids are present and to estimate the fraction of contamination on the debris in accordance with EDF-3570, "Waste Characterization Strategy for Contaminated Debris (Draft)."[a]

3.2 Waste Minimization

Waste minimization for this project will be accomplished through design and planning to ensure efficient operations that will not generate unnecessary waste. As part of the prejob briefing, emphasis will be placed on waste-reduction philosophies and techniques. Personnel will be encouraged to continuously attempt to suggest or improve methods for minimizing waste generation. Contact with contaminated materials will be minimized. A graded approach will be used to decontaminate soil-sampling equipment in order to minimize decontamination waste. First, the equipment will be brushed clean. If brushing is not sufficient, then the equipment will be wiped clean with rags. If brushing or wiping does not perform adequate decontamination, the equipment will be steam-cleaned.

3.3 Waste Characterization Strategy

The implementation of the Comprehensive Remedial Design/Remedial Action Work Plan Addendum (DOE-ID 2003a) will generate Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation waste. This waste has been and will be characterized to support a hazardous waste determination that will provide information for subsequent management. Waste streams will be identified and characterized, and the land disposal restriction status will be determined, thereby ensuring that all applicable, relevant, and appropriate requirements are met before the waste is shipped for treatment, storage, and disposal. Waste profiles will be prepared for all waste streams by using analytical information and/or process knowledge.

Waste managed in accordance with this Waste Management Plan will be characterized by using approved sampling and analytical information, or by using process knowledge. Waste characterization solely based on process knowledge must ensure that the chemical, physical, and radiological properties of the waste are adequately determined. The designation must be accomplished with sufficient accuracy to ensure that subsequent treatment, storage, or disposal of the waste is protective of human health and the environment.

The CERCLA remediation waste that meets the definition of debris provided in 40 *Code of Federal Regulations* (CFR) 268.2, "Definitions Applicable in this Part," will be characterized by applying knowledge of the waste constituents expected to be contaminating the debris. Only a fraction of each chemical and radiological constituent associated with the material known to have been in contact with the debris will be used to characterize the debris. For debris contaminated with material from the contents of the V-Tanks, the 90% upper confidence limit of the average radiological and chemical analytical data associated with the contents of Tanks V-1, V-2, V-3, and V-9 is the value to which the contamination

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a. EDF-3570, 2003, "Waste Characterization Strategy for Contaminated Debris (Draft)," Environmental Restoration, March 2003.

Table 1. Waste stream summary.

Remedial Action Activity	Waste Description	Location	Expected Type (MLLW, LLW, IW, TSCA) and Applicable Waste Codes	Estimated Volume	Planned DOT Class Packaging	Storage Location	Planned Treatment/Disposal
Isolation of Tank V-9	Empty piping	Tank V-9 effluent piping	MLLW (F001)	15 ft^3	Class 7 LSA Package in sand filter or wooden waste box.	CERCLA WSA	Macro or microencapsulate/ ICDF[a]
Isolation of Tank V-9	Empty NaOH piping	—	MLLW (F001, D007)	15 ft^3	Class 7 LSA Package in sand filter or wooden waste box.	CERCLA WSA	Macro or microencapsulate/ ICDF[a]
Sand filter relocation	Sand filter structure and contents	Tank V-9 proximity	MLLW (F001) TSCA PCB remediation waste >50 ppm	22.7 ft^3	Class 7 LSA Shrink-wrap or containerize in wooden waste box.	CERCLA WSA	Macro or microencapsulate/ ICDF[a]
Preparation for Tank V-9 isolation	Concrete tank cradles and other misc. debris	V-Tank AOC	MLLW (F001)	96 ft^3	Class 7 LSA Metal drums or box, or wooden waste box	CERCLA WSA	Macro or microencapsulate/ ICDF[a]
Isolation of Tank V-9, debris removal, and sand filter relocation	Secondary waste debris (such as personal protective equipment, rags, and tools)	V-Tank AOC	MLLW (F001)	70 ft^3	Class 7 LSA Metal drums or box, or wooden waste box	CERCLA WSA	Macro or microencapsulate/ ICDF[a]
Soil sampling to further define the AOC and characterize soil, and decon. of sampling equipment	Secondary waste debris (such as personal protective equipment, rags, tools, and lexan liners)	V-Tank AOC	MLLW (F001)	70 ft^3	Class 7 LSA Metal drums or box, or wooden waste box	CERCLA WSA	Macro or microencapsulate/ ICDF[a]

Table 1. (continued).

Remedial Action Activity	Waste Description	Location	Expected Type (MLLW, LLW, IW, TSCA) and Applicable Waste Codes	Estimated Volume	Planned DOT Class Packaging	Storage Location	Planned Treatment/Disposal
Soil sampling to further define the AOC and characterize soil	Decon. water generated from decon. of sampling equipment	V-Tank AOC	MLLW (F001)	300 gal	Class 7 LSA Metal drums	CERCLA WSA	Sample water in accordance with an approved sampling plan. Absorb or solidify free liquid after receipt and evaluation of sample results/ICDF[a]
Soil sampling to further define the AOC and characterize soil	Unaltered soil sample returns	V-Tank AOC	MLLW (F001)	NA	NA	NA	Expected to meet alternative soil treatment standards/ Will be disposed of at the Analytical Laboratory or will be returned to AOC.
Soil sampling to further define the AOC and characterize soil	Altered soil sample residues	V-Tank AOC	MLLW (F001)	NA	NA	NA	Will be treated, if necessary, and disposed of by the Analytical Laboratory.
All remedial activities	Waste defined as industrial waste	V-Tank AOC	IW	NA	NA	NA	INEEL Landfill Complex
All remedial activities	Waste defined as LLW and selected for disposal at RWMC	V-Tank AOC	LLW	NA	Class 7 Metal drums or box, or wooden waste box	Radioactive Material Area	RWMC

a. The ICDF is the planned facility for disposal. However, other facilities such as the RWMC or Envirocare may be used for disposal, as appropriate. All waste is anticipated to be Class A waste in accordance with 10 CFR 61.55, "Waste Classification."

AOC = area of contamination
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
DOT = U.S. Department of Transportation
ICDF = INEEL CERCLA Disposal Facility
IW = industrial waste
LLW = low-level waste
MLLW = mixed low-level waste
NaOH = sodium hydroxide
PCB = polychlorinated biphenyl
RWMC = Radioactive Waste Management Complex
TSCA = Toxic Substances Control Act
WSA = waste storage area

factor, determined by EDF-3570 (see footnote a), will be applied to determine the fraction of contamination on debris.

For debris contaminated during soil-sampling actions, the 90% upper confidence limit for the average radiological and chemical analytical data associated with the soil the debris came in contact with is the value to which the contamination factor, determined by EDF-3570, will be applied to determine the fraction of contamination on debris. Application of the debris contamination factor will be in accordance with EDF-3570.

Debris generated during soil-sampling activities will be managed as mixed low-level waste, pending soil sample results. A no-longer-contained-in determination will be requested for soil and debris that exhibit chemical characteristics (determined by soil analysis) that are within acceptable levels for such a determination. Radiologically contaminated debris and soil receiving a no-longer-contained-in determination will be disposed of at the ICDF or Radioactive Waste Management Complex (RWMC).

3.4 Idaho National Engineering and Environmental Laboratory Management and Disposition

Waste generated at the INEEL as a result of CERCLA remedial activities includes hazardous, mixed low-level waste (MLLW), low-level radioactive waste (LLW), and industrial waste (IW). These various types of waste may contain contaminants such as polychlorinated biphenyls (PCBs) or asbestos that might be regulated by the Toxic Substances Control Act (TSCA) and the National Emissions Standards for Hazardous Air Pollutants (NESHAPs). This waste may be disposed of at the INEEL, if it meets the specific facility's waste acceptance criteria. Typically, most of the CERCLA-generated waste will be sent to the ICDF for disposal, although CERCLA-generated IW is typically disposed of at the INEEL Landfill Complex. The use of the RWMC is an additional option for disposal of suitable CERCLA-generated LLW.

3.4.1 Waste Planned for Disposal at the INEEL CERCLA Disposal Facility

Most of the waste described in this plan is planned for disposal at the ICDF. This waste will be required to meet the ICDF's current waste acceptance criteria. Both hazardous and MLLW also must meet applicable RCRA land disposal restrictions.

3.4.2 Waste Transported to Non-Idaho National Engineering and Environmental Laboratory Facilities

Some of the waste generated during CERCLA remedial activities is expected to be sent to a treatment, storage, or disposal facility located outside INEEL boundaries. However, CERCLA hazardous or mixed waste that is sent outside INEEL boundaries for treatment, storage, or disposal (TSD) may be sent only to a permitted or interim status TSD facility that has been found suitable to receive hazardous waste from CERCLA remediation sites by the TSD facility's own Environmental Protection Agency (EPA) Regional Office, in accordance with 40 CFR 300.440(a)(4).

3.4.3 Wastes Planned for Disposal at Non-CERCLA INEEL Facilities

The management and disposition of the waste streams described in this Waste Management Plan are based on information from the *Comprehensive Remedial Investigation/Feasibility Study for the Test Area North Operable Unit 10 at the Idaho National Engineering and Environmental Laboratory* (DOE-ID 1997), the Final Record of Decision, the Comprehensive Remedial Design/Remedial Action Work Plan Addendum (DOE-ID 1999, 2003a), and other available data. Estimated volumes, initial

characterizations, anticipated treatments (if any), and planned dispositions were developed and reviewed in the preparation of this Waste Management Plan. A primary objective of this plan is to evaluate the appropriateness of management and disposal options for the anticipated waste. Appropriateness of a disposal option is based on whether a particular waste could reasonably be expected to cause or contribute to an environmentally significant release of hazardous substances from a selected facility. Releases of hazardous substances to the air or groundwater in quantities that could reasonably be expected to pose a significant threat to human health and the environment are considered environmentally significant. Any waste described in this Waste Management Plan that would be reasonably expected to exceed this threshold criterion will be evaluated separately to determine the suitability of the waste for disposal. This particular waste will not be shipped for disposal unless special provisions are made and documented to mitigate the potential for release. The primary list of hazardous substances under CERCLA is contained in 40 CFR 302.4, "Designation of Hazardous Substances." As the remedial process proceeds and additional information becomes available, reviews that are more detailed will be conducted (as described below), to ensure that waste planned for specific disposal options meets the detailed waste acceptance criteria for each specific facility.

3.4.4 Managing Low-Level Waste for Disposal at the Radioactive Waste Management Complex

The RWMC includes a LLW disposal unit that is operated by the U.S. Department of Energy (DOE) under the Atomic Energy Act, as amended. Operations of the LLW disposal facility at the RWMC are governed by DOE orders. Department of Energy Headquarters has determined that the RWMC LLW disposal facility complies with DOE orders and that the facility is authorized to operate. To ensure that the LLW sent to RWMC for disposal is appropriate and suitable for disposal at RWMC, the waste is evaluated by Waste Generator Services (WGS) to ensure that the waste will meet the RWMC waste acceptance criteria. The RWMC is not permitted by the Environmental Protection Agency or licensed by the Nuclear Regulatory Commission to dispose of RCRA hazardous or mixed waste. To ensure hazardous or mixed waste is not sent to RWMC, a hazardous waste determination for each waste stream will be completed by WGS to ensure that the CERCLA LLW (a) does not exhibit the characteristics of a hazardous waste and has not been in contact with a listed hazardous waste; or (b) that it has been analyzed to demonstrate that it no longer contains a hazardous waste above risk-based concerns. When appropriate, the hazardous waste determination may be based on process knowledge concerning the origin and history of the waste proposed for disposal. To help ensure that LLW is managed to protect human health and the environment, the RWMC employs the following methods:

- Characterization of CERCLA LLW by WGS to ensure the requirements of the waste acceptance criteria are met before shipment to the RWMC
- Prohibiting the receipt of RCRA hazardous or mixed waste
- Prohibiting the receipt of free liquids at the landfill
- Inspections of received waste to validate that the waste meets the waste acceptance criteria and is consistent with the waste profile
- Implementation of an environmental monitoring program at the RWMC.

Environmental monitoring data has not indicated an environmentally significant release of hazardous substances to the air or groundwater from current LLW disposal operations at the RWMC. If future environmentally significant releases to the air or groundwater are identified, those releases may be

subject to response actions, as stipulated by Section V. of the *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory* (DOE-ID 1991).

3.4.5 Managing Industrial Waste for Disposal at the Idaho National Engineering and Environmental Laboratory Landfill Complex

Industrial waste (IW) is solid waste that is neither radioactive nor hazardous. At the INEEL, industrial waste streams are typically disposed of at the INEEL Landfill Complex. Many types of CERCLA IW are generated in the AOC as a result of material used in a remediation project that the generator believes has not been contaminated with either radioactive or hazardous materials. This absence of contamination is validated by radiation surveys or visual inspections. A general hazardous waste determination is prepared for routinely generated IW to document that the waste is neither radioactive nor hazardous.

Industrial waste streams that have a higher probability of containing constituents restricted from disposal are considered non-routine and will undergo a waste stream-specific hazardous waste determination. This determination is accomplished by sampling, performing radioactive surveys, using process knowledge of the waste-generating process (e.g. determining if the waste was mixed with a listed waste or derived from the treatment, storage, or disposal of a listed waste), and evaluating the composition of the IW.

Waste Generator Services evaluates CERCLA IW to determine if the waste meets the IW acceptance criteria. Industrial waste is generally collected in IW collection dumpsters posted with signs describing acceptable and prohibited items. However, to ensure that disposal of industrial waste is protective to human health and the environment, the INEEL Landfill Complex employs the following additional methods:

- Characterization of IW by WGS to ensure that the requirements of the waste acceptance criteria are met before to shipment to the facility
- Prohibiting the receipt of radioactive and hazardous waste
- Prohibiting the receipt of free liquids at the landfill
- Periodically inspecting received waste to validate that it meets the acceptance and waste determination criteria
- Periodic location and sampling of groundwater monitoring wells near the INEEL Landfill Complex.

Environmental monitoring data has not indicated an environmentally significant release of hazardous substances to the air or groundwater from current IW disposal operations at the INEEL Landfill Complex. The current disposal area at the INEEL Landfill Complex is a solid waste management unit. As such, if future environmentally significant releases to the air or groundwater are identified, those releases may be subject to response action, as stipulated by Section V. of the Federal Facility Agreement and Consent Order (FFA/CO) (DOE-ID 1991).

3.4.6 Waste Packaging and Transportation

Before CERCLA waste is transported to a disposal facility, WGS and Packaging and Transportation Department (P&T) personnel will be contacted to ensure the waste is properly

containerized and labeled. All sampling and transportation will occur in compliance with the applicable Department of Transportation (DOT) and RCRA regulations. Contact with the disposal facility must be made in advance to allow both the facility and the shipper the time required to make any preliminary arrangements. A waste evaluation and confirmation process will be conducted to ensure that the waste will meet the disposal waste acceptance criteria.

3.4.7 Managing Waste Information

Information pertaining to waste characteristics, waste generation and storage locations, disposition plans, and waste shipments for CERCLA MLLW, CERCLA LLW, and non-routine CERCLA IW generated at the INEEL is maintained in an electronic data-base called the Integrated Waste Tracking System (IWTS). Material profiles are developed by IWTS to provide characterization information that is specific to a particular waste stream. As the waste is generated, information pertaining to individual containers of waste is reported in individual IWTS container profiles. The information in the IWTS material profiles and container profiles is certified by a WGS waste technical specialist (WTS), who certifies that a hazardous waste determination has been performed and that the information is complete and accurate based on the analytical data or process knowledge used for characterization. The WTS also certifies that the information for the container falls within the bounds of the parent material profile. A different WGS WTS follows with an independent review of the information for completeness and accuracy. Finally, the information in the material and container profiles is approved by a WGS WTS who authorizes WGS to dispose of the waste in accordance with the disposition path defined in the IWTS material profile, and authorizes that the waste meets the acceptance criteria of the facility or facilities where the waste will be disposed of. This approval must not be performed by the WTS performing the review.

Waste technical specialists use the information in the IWTS material and container profiles to ensure that CERCLA waste meets the acceptance criteria of the receiving facility. The IWTS also tracks shipments of waste to various facilities using specific IWTS shipping tasks. All receiving facilities, including those located outside the boundaries of the INEEL, must approve waste shipments before they are shipped. This approval is not documented in the IWTS database, but is maintained in a hard copy file with the waste characterization information.

It should be noted that not all CERCLA IW is tracked in the IWTS database. An example of IW that is not tracked in the IWTS is routine office waste. This waste is placed into IW receptacles that are placarded with information pertaining to what is permissible to be placed in the receptacles. Some IW is tracked in the IWTS database to ensure that the INEEL Landfill Complex is aware that the waste is being shipped and that it meets the facility's acceptance criteria. An example of IW that would be tracked in the IWTS is color-coded material such as yellow shoe covers. Since yellow shoe covers are typically used for protection against radioactive contamination, a special profile has been prepared for color-coded personal protective equipment that has been surveyed and found not to be contaminated with radioactivity, or that has been used for training purposes. Another example would be containers that have had all contents removed, and the empty containers are not contaminated radiologically. Container profiles are typically not prepared for IW because the waste is shipped to the facility in reusable receptacles, in bulk shipments, or is non-containerized.

There will be MLLW and possibly TSCA PCB waste generated at physical interfaces between VCO- and CERCLA-managed programs. The MLLW and/or TSCA PCB waste generated to support CERCLA remediation activities will be managed as CERCLA remediation waste (as detailed in this Waste Management Plan), and in accordance with the Final Record of Decision and the Explanation of Significant Differences (DOE-ID 1999, 2003b). The MLLW and/or TSCA waste generated to support VCO activities will be managed in accordance with applicable RCRA and/or TSCA regulations.

3.4.8 Storage, Inspection, and Recordkeeping

All containers of CERCLA MLLW and/or TSCA PCB remediation waste generated during the cleanup activities will be stored in an approved CERCLA waste storage area (WSA) until they are transferred to an appropriate treatment, storage, or disposal facility. Storage, inspection, and recordkeeping will be performed according to the applicable, relevant, and appropriate requirements identified in the Final Record of Decision and the Explanation of Significant Differences (DOE-ID 1999, 2003b). A sample checklist for the WSA is attached as Appendix A.

Waste generated from this early remediation project may be transported to INEEL treatment, storage, and disposal facilities that are appropriate to each specific waste type. Mixed low-level waste and TSCA waste will only be managed in facilities approved for the specific waste type.

3.4.9 Managing Waste in the Area of Contamination

Work within the AOC includes soil excavation, ancillary pipe removal, sand filter relocation, and soil sampling. For waste management purposes, the AOC is defined as the area of contiguous contamination surrounding the TSF-09 and TSF-18 sites. This area is delineated by the presence of radioactive or hazardous contamination resulting from system operations. Sampling conducted as part of this early remediation will assist in refining the current designation of limits for the AOC. Waste generated as part of this remediation effort may be managed within the AOC or at other appropriate waste management facilities. Hazardous waste that is generated during remediation activities, and that leaves the AOC, will be required to meet land disposal-restriction standards before disposal.

4. REFERENCES

10 CFR 61.55, 2003, "Waste Classification," *Code of Federal Regulations*, Office of the Federal Register, March 2003.

40 CFR 268.2, 2003, "Definitions Applicable in this Part," *Code of Federal Regulations*, Office of the Federal Register, January 2003.

40 CFR 300.440, 2003, "Procedures for Planning and Implementing Off-Site Response Actions," *Code of Federal Regulations*, Office of the Federal Register, May 2003.

40 CFR 302.4, 2002, "Designation of Hazardous Substances," *Code of Federal Regulations*, Office of the Federal Register, September 2002.

DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory*, Administrative Record No. 1088-06-29-120, U.S. Department of Energy Idaho Operations Office; U.S. Environmental Protection Agency, Region 10; Idaho Department of Health and Welfare, December 4, 1991.

DOE-ID, 1997, *Comprehensive Remedial Investigation/Feasibility Study for the Test Area North Operable Unit 1-10 at the Idaho National Engineering and Environmental Laboratory*, DOE/ID-10557, Revision 0, U.S. Department of Energy Idaho Operations Office, November 1997.

DOE-ID, 1999, *Final Record of Decision for Test Area North, Operable Unit 1-10*, DOE/ID-10682, Revision 0, U.S. Department of Energy Idaho Operations Office, October 1999.

DOE-ID, 2002, *Technology Evaluation Scope of Work for the V-Tanks, TSF-09/18, at Waste Area Group 1, Operable Unit 1-10*, DOE/ID-10999, Revision 0, U.S. Department of Energy Idaho Operations Office, July 2002.

DOE-ID, 2003a, *Comprehensive Remedial Design/Remedial Action Work Plan Addendum for V-Tanks Early Remedial Action for the Test Area North, Waste Area Group 1, Operable Unit 1-10, Group 2 Sites*, DOE/ID-11075, Revision 0, U. S. Department of Energy Idaho Operations Office, May 2003.

DOE-ID, 2003b, *Explanation of Significant Differences for the Record of Decision for the Test Area North Operable Unit 1-10*, DOE/ID-11050, Revision 0, U. S. Department of Energy Idaho Operations Office, April 2003.

EDF-3447, 2003, "Criticality Concerns Associated with the V-Tanks," Idaho Completion Project, May 2003.

ITC, 1994, *Preliminary Scoping Track 2 Summary Report for the Test Area North Operable Unit 1-05: Radioactive Contamination Sites*, INEL-94/0135 (formerly EGG-ER-11162), Revision 0, Idaho National Engineering and Environmental Laboratory, October 1994.

Appendix A

Comprehensive Environmental Response, Compensation, and Liability Act Waste Storage-Area Checklist (Sample)

(This sample checklist is produced for information purposes only. It is an example of a checklist that could be used effectively in waste storage-area management under this plan.)

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT STORAGE AREA INSPECTION CHECKLIST (SAMPLE)

Registration Number:

	YES	NO	N/A	
1.	____	____	____	Is there waste in the area? IF "NO," inspection is complete, sign and date below.
2.	____	____	____	Is an up-to-date copy of the registration form posted at the area?
3.	____	____	____	Are "NO SMOKING" signs posted in the area if storing RCRA ignitable or reactive waste?
4.	____	____	____	Are all waste containers labeled with the words "CERCLA WASTE" and an IWTS barcode?
5.	____	____	____	Are all non-waste items stored in the area appropriately marked or labeled for identification?
6.	____	____	____	Is the housekeeping in the area adequate?
7.	____	____	____	Is there adequate aisle space for personnel and equipment to respond to emergencies?
8.	____	____	____	Are all waste containers closed except when adding or removing waste?
9.	____	____	____	Is each waste container compatible with the waste stored in it?
10.	____	____	____	Are all waste types segregated within the area to maintain requirements for compatibility?
11.	____	____	____	Do quantities recorded in the logbook equal quantities stored in the area?
12.	____	____	____	Are waste types and quantities in accordance with those specified in the Appendix L?
13.	____	____	____	Is the Emergency and Communications Equipment present as listed in the Appendix L?
14.	____	____	____	Are there, or have there been, any releases or spills in the area since the last inspection?
15.	____	____	____	If "Yes" to Question 14, has the spill or release been reported to the emergency coordinator listed in the Appendix L?
16.	____	____	____	If "Yes" to Question 14, has the spill or release been remediated and the spill and remediation documented on this checklist?

	YES	NO	N/A	
17.	____	____	____	Are all containers and/or PCB items in good condition with no leakage or signs of deterioration?
18.	____	____	____	Is PCB containment volume equal to 2 times the internal volume of the largest PCB article or PCB container, or 25% of the total internal volume of all PCB articles or containers, whichever is greater?
19.	____	____	____	Is the entrance to PCB storage marked with a large PCB M_L mark? (40 CFR 761.45)?
20.	____	____	____	Is each PCB item or container marked with a PCB M_L or M_S mark?
21.	____	____	____	Are items marked with an out-of-service date?
22.	____	____	____	Have previously identified deficiencies undergone resolution? Indicate status on back of inspection form.

CERTIFICATION OF INSPECTION

I certify that all of the above applicable items have been inspected. Date_____ Time_____

Name (print)_____Inspector

Signature_____

DEFICIENCY RESOLUTION TRACKING TABLE

For each "No" answer identified on the inspection checklist, note the item number and describe the nature of the deficiency in the table. A "Yes" answer to Question No. 14 would indicate a spill and should be logged as a deficiency. Each week, indicate the status of previously identified deficiencies that have not yet been resolved.

Inspection Item Number	Date Identified	Description of Deficiency	Deficiency Resolution Status

This checklist must be maintained at the facility for the current inspection year and 5 years hence.